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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/067,359	02/07/2002	Masaki Nitta	01272.020508	7439
5514	7590	03/31/2004	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			NGUYEN, LAM S	
			ART UNIT	PAPER NUMBER
			2853	
DATE MAILED: 03/31/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/067,359	<b>Applicant(s)</b> NITTA ET AL. 	
	<b>Examiner</b> LAM S NGUYEN	<b>Art Unit</b> 2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-15 and 18-27 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 16 and 17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)     | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-3, 6-15, 18-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Koike et al. (US 5767876).

Koike et al. disclose a color ink-jet recording apparatus using a black recording head (FIG. 36, element 81) that ejects black ink on the basis of black image data and color recording heads that ejects color ink on the basis of color image data (FIG. 36, element 82), the color ink permeating through a recording medium at a higher speed than said black ink (column 4, line 57-65), the apparatus completing a record image in a predetermined recording area on said recording medium by causing said recording heads to perform a plurality of recording scans in said predetermined recording area (FIG. 38-51), the apparatus comprising:

data generating means, which, for each of the plurality of recording heads, uses mask patterns to generate image data for each of said recording scans corresponding to said predetermined recording area, so that black image data corresponding to said predetermined recording area are allotted to each of said recording scans, and color image data corresponding to said predetermined recording area are to each of said recording scans (FIG. 38-51: a corresponding generating means generates mask patterns for black or color image data for a scan),

Art Unit: 2853

wherein each of the mask pattern for said black image data and color image data used during the same recording scan has different allotment rates (FIG. 38-51: the allotment rates of black and colors are different in the same scan; For example, in FIG. 49 and column 27, line 16-18, "black and cyan are recorded by a first record scan" to print the band A with the allotment rate of Cyan is 50% and the allotment rate of Black is 33%. In the next scan, the black and cyan are recorded together to print band B (FIG. 50). In the third scan, the black and cyan are recorded together to print band C (FIG. 51). Therefore, the black image data and the cyan image data are used during the same scan for every scans)).

**Referring to claims 2, 14:** wherein mask pattern having different allotment rates are used as the mask patterns for said black image data and color image data (FIG. 38-51).

**Referring to claims 3, 15:** further comprising black image data allotment rate setting means for setting, for each of said recording scans, allotment rates for the mask patterns for said black image data (FIG. 38-51: a corresponding means for setting the rate of black image data for each scan); and

color image data allotment rate setting means for setting, for each of said recording scans, allotment rates for the: mask patterns for said color image data (FIG. 38-51: a corresponding means for setting the rate of color image data for each scan);

wherein both said image data allotment rate setting means set different allotment rates for the mask patterns for said black image data and color image data used during the same recording scan (FIG. 38-51: the allotment rates of black and colors are

Art Unit: 2853

different; For example, in FIG. 49, recording scan A, while the allotment rate of Cyan is 50%, the allotment rate of Black is 33%).

**Referring to claims 6, 18:** wherein when a black image is to be formed in said predetermined area, before or after the black ink is caused to impact the recording medium, at least one of said plural types of color ink is caused to impact locations onto which the black ink is ejected (FIG. 40-42, 44-45, 48-51, FIG. 34A\_B)).

**Referring to claims 7, 19:** further comprising a thinning means, which thins said black image data at a predetermined thinning rate and causes the plural types of color ink to impact portions of the recording area in which said black image data has been thinned (FIG. 44-45: scan A and FIG. 14A-B).

**Referring to claims 8, 20:** wherein at least one of said plural types of color ink is reactive and tends to cause said black ink to solidify or cohere when contacting with said black ink (column 21, line 32-41).

**Referring to claims 9, 21:** wherein said recording heads executes recording only during scans in one of the forward and backward scanning directions, and in the scanning direction in which the recording is carried out, said color recording heads are arranged in front of said black recording head (FIG. 46).

**Referring to claims 10, 22:** wherein if said recording heads carry out recording in both the forward and backward scanning directions, then during the first recording scan, said color image data has a higher allotment rate than said black image data (FIG. 49).

**Referring to claims 11, 23:** wherein said plural color ink types include cyan, magenta, and yellow ink (FIG. 36, element 82).

Art Unit: 2853

**Referring to claims 12, 24:** wherein said recording heads exert thermal energy to generate bubbles in the ink so that energy generated by the bubbles causes the ink to be ejected (column 1, line 29-32).

**Referring to claims 26-27:** a program for executing image processing and a computer-readable storage medium storing the program (column 18, line 18-31).

***Allowable Subject Matter***

Claims 4-5 and 16-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**Referring to claims 4 and 16:** The most pertinent art Koike et al. (US 5767876) fails to disclose wherein if said black image data allotment rate setting means sets an allotment rate higher than a predetermined reference allotment rate, the color image data allotment rate setting means sets an allotment rate lower than said reference allotment rate, and if said black image data allotment rate setting means sets an allotment rate lower than said reference allotment rate, the color image data allotment rate setting means sets an allotment rate higher than said reference allotment rate. Therefore, the claimed invention is not disclosed by the prior art.

Claims 5 and 17 are allowable because they depend directly on claim 4 and 16.

***Response to Arguments***

Applicant's arguments filed 02/26/2004 have been fully considered but they are not persuasive.

**Regarding to the argument on page 15:** The applicants argued that "Koike is not seen to disclose both black image data and color image data in each of a plurality or

Art Unit: 2853

recording scans". However, as discussed above, in FIG. 49-51, Koike clearly discloses that both black and cyan image data are used to print bands A, B, and C in three successive scans. In other words, Koike discloses both black image data and color image data to be used in each of a plurality of recording scans. Therefore, the argument is not persuasive.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAM S NGUYEN whose telephone number is (571)272-2151. The examiner can normally be reached on 7:00AM - 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, STEPHEN D MEIER can be reached on (571)272-2149. The fax phone

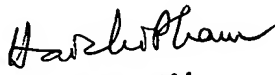
Art Unit: 2853

number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LN

March 25, 2004

  
HAI PHAM  
PRIMARY EXAMINER